BALL, LOGAN, D.M.A. Mark Applebaum: Challenging the Ontology of Music. (2020)
Directed by Dr. Eric Willie. 65 pp.

I. Solo Recital: Sunday, October 22, 2017, 3:30 p.m., Recital Hall. *Wail* from *The Mathematics of Resonant Bodies* (John Luther Adams); *Jubilee* (Mark Duggan); *Celestial Sphere* (David Crowell); *Fantasia IIIb* (Nicholas Deyoe); *Composition Machine No. 1* (Mark Applebaum).

II. Solo Recital: Saturday, April 27, 2019, 7:30 p.m., ETSU Recital Hall. *Tromp Miniature* (Bryce Dessner); *Red Arc / Blue Veil* (John Luther Adams); *Entre Funérailles II* (Mark Applebaum); *Made of Windows* (Evan Chapman); *Nothing is Real* (Alvin Lucier); *Motetus* (Christopher Adler); *Echolalia* (Mark Applebaum).

III. Solo Recital: Saturday, August 1, 2020, 3:30 p.m., ETSU Recital Hall. *In a Landscape* (John Cage); *Silver Streetcar for the Orchestra* (Alvin Lucier); *Aphasia* (Mark Applebaum); *At Any Rate (Take Your Time)* (Jacob Thiede); *Hard-Boiled Capitalism and the Day Mr. Friedman Noticed Google is a Verb* (Ben Wahlund); *The Metaphysics of Notation* (Mark Applebaum).

IV. D.M.A. Research Project. MARK APPLEBAUM: CHALLENGING THE ONTOLOGY OF MUSIC. (2020)

The purpose of this study is to investigate Mark Applebaum's musical background and influences while investigating his thoughts behind some of his most unique works. As a person who continuously challenges the definition and ontology of music, this study will illustrate Applebaum's creative process and contributions to contemporary art. Performance practice of Applebaum's works, with additional considerations and suggestions regarding interpretation will be provided throughout this document. In an effort to represent the diversity and depth of his compositions, the selected works to be discussed are generated from numerous enterprises: instrumental inventions, graphic notation, and works with gestural properties.

MARK APPLEBAUM: CHALLENGING THE ONTOLOGY OF MUSIC

by

Logan Ball

A Dissertation Submitted to
the Faculty of The Graduate School at
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of the Requirements for the Degree
Doctor of Musical Arts

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2020

Approved by

_____
Committee Chair

APPROVAL PAGE

This dissertation written by Logan Ball has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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Date of Acceptance by Committee

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Date of Final Oral Examination

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CHAPTER I

INTRODUCTION

Mark Stephen Applebaum is an American composer who has written many works with distinct qualities. Often thought of as being unorthodox and extraordinary, Applebaum's music has a unique voice which he credits to his increasing boredom with conventional instruments and notational styles.

The creative nature of Applebaum's oeuvre is illuminated by detailing a contrasting selection of his pieces and creations. An analysis and performance guide accompanies the discussed works. In an effort to represent the diversity and depth of his compositions, the works discussed are generated from numerous enterprises: instrumental inventions, graphic notation, and works with gestural properties.

Purpose of Study

The purpose of this study is to investigate Mark Applebaum's musical background and influences while investigating the thoughts behind some of his most unique works. This study will illustrate Applebaum's creative process and contributions to contemporary art as a person who has continuously challenged the very definition and ontology of music. Performance practice of Applebaum's works with additional considerations and suggestions regarding interpretation, will be provided throughout this document.

Research Questions

The following research considerations will be addressed in this study:

1) Mark Applebaum's Background

    a. Biographical Information

    b. Influences (Musically and Personally)

2) Selected Works

    a. Instrument Creations (Emphasis on the *Mouseketier*)

    b. *The Metaphysics of Notation*)

    c. *Aphasia*

    d. *Echolalia*

3) Performance Guide and Suggestions for Selected Works

Survey of Related Research

Upon searching for research pertaining to the creative output of Mark Applebaum, one will notice an unfortunate lack of resources. In fact, there is only one known dissertation with the focus of analyzing Applebaum's works (specifically acoustic works for percussion). This writing, crafted by Dr. R. Shane Reeves, is entitled *The Eccentric Compositional Style of Mark Applebaum: An Analysis of his Acoustic Percussion Works*. Other academic sources include writings dedicated to singular pieces by Applebaum such as Camille Brown's short article regarding Applebaum's *Aphasia*. Other short entries include James Bash's *Grove Music Online* entry which consists of a few biographical paragraphs.

Other scholarly sources that function similarly to the manner in which this document will proceed, include dissertations written by Dr. Stuart W. Gerber (*Karlheinz Stockhausen's Solo Percussion Music: A Comprehensive Study*) and Dr. Andrew M. Bliss (*David Lang: Deconstructing a Constructivist Composer*). In both of these studies, the authors lay a foundation consisting of key information that they have gathered through primary means such as in-person interviews with their subjects. Furthermore, these authors go on to highlight a collection of pieces from their respective subjects and show how they contributed to our artform in meaningful and unique ways.

Procedures

The research procedures include:

1) Briefly provide a biography of Mark Applebaum.
2) Review existing research on Mark Applebaum.
3) Produce original research on Mark Applebaum.
4) Show unique qualities in Applebaum's compositions and the compositional methods with which he composes.
5) Explore a variety of homemade instruments created by Applebaum and discover how they are used in selected compositions.

CHAPTER II

BIOGRAPHY AND MUSICAL INFLUENCES

Mark Stephen Applebaum was born to Robert and Rosalie Applebaum on Friday, October 13, 1967 in Chicago, Illinois.[1] As a child, Applebaum studied piano, as his father was a pianist and composer. The two would go on to form the Applebaum Jazz Piano Duo, with performances across the United States, South America, and Europe. In high school, Applebaum continued playing piano and joined a rock band. In this rock band, he and his bandmates would attempt to recreate every sound from the popular albums at that time. Applebaum has stated that he no longer recognizes that person anymore.[2] While in high school, Applebaum claims that theatre was more artistically meaningful to him than music.[3] This is perhaps a foreshadowing of his many pieces that employ visual components.

Following high school, Applebaum decided to attend Carleton College in Northfield, Minnesota. According to Applebaum, he decided to attend a liberal arts college to be a music major, but because he felt that "these are my people."[4] At the time, Applebaum wanted to study harp. Applebaum states, "I wanted to major in music so I could do other things that weren't music. "[5] During a phone interview with the writer,

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[1] Juli Hodgson. "Mark Applebaum: A Biography." *Mississippi Writers and Musicians*. Accessed July 12, 2020. http://www.mswritersandmusicians.com/mississippi-musicians/mark-applebaum#bio.
[2] Mark Applebaum, phone interview by author, May 12, 2020.
[3] Ibid.
[4] Ibid.
[5] Ibid.

Applebaum mentioned that the music majors at Carleton College had more "free time" than non-music majors.

However, while at Carleton College, he studied composition with Philip Rhodes and completed a senior thesis project that involved a trip to Mexico City where he interviewed Conlon Nancarrow.[6] He graduated from Carleton College in 1989 as *magna cum laude* and received the Larsen Award for Distinction in the Creative and Performing Arts.[7] He received his Master of Arts and his Ph.D. in Music Composition from the University of California at San Diego (UCSD) in 1992 and 1996, respectively. He primarily studied with Dr. Brian Ferneyhough during his time at UCSD.[8]

He returned to Carleton College in 1996 as the *Dayton-Hudson Visiting Scholar* before assuming a tenure-track position and Mississippi State University in 1997.[9] In 2000, he would go on to accept a position at Stanford University, where he currently serves as Professor of Composition and Theory. He has also been named the *Leland & Edith Smith Faculty Scholar* as well as the *Hazy Family University Fellow in Undergraduate Education*.[10] Applebaum is also the founder and director of the Stanford Improvisation Collective, also known as [sic].[11] He has also taught composition courses in Antwerp, Santiago, Singapore, Paris, Amsterdam, and Oxford.[12] He has received

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[6] Mark Applebaum. "Biography." Accessed July 12, 2020. http://www.markapplebaum.com/bio.html.
[7] Ibid.
[8] James Bash. "Applebaum, Mark." *Grove Music Online. Oxford Music Online*. Oxford University Press. accessed July 15, 2020. http://www.oxfordmusiconline.com/subscriber/article/grove/music/A2227169.
[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Mark Applebaum. "About." Accessed July 12, 2020. https://music.stanford.edu/people/mark-applebaum.

commissions from Betty Freeman, the Merce Cunningham Dance Company, the Fromm Foundation, the Kronos Quartet, the Vienna Modern Festival, the Paul Dresher Ensemble, the St. Lawrence String Quartet, the Meridian Arts Ensemble, Chamber Music America, the Spoleto Festival, and numerous others.[13]

In memory of his sister, Applebaum and his wife endowed the *Carolyn Applebaum Memorial Prize* at Stanford University and at Carleton College, prizes awarded not for student academic or artistic achievement, but rather to recognize individuals whose efforts have made the most positive impact on the artistic agency and capacity of *other* students. It is an award for helping to engender a robust and engaged arts community.[14] In 2012, Applebaum convened the first-ever national conference to examine and reform the state of music composition pedagogy in higher education and co-edited a published volume of the proceedings in *Contemporary Music Review*.[15]

Currently, Mark resides in Menlo Park, California with his wife Joan Friedman and their daughter, Charlotte.

[13] Ibid.
[14] Mark Applebaum. "Bio." Accessed August 14, 2020. http://web.stanford.edu/~applemk/bio.html.
[15] Ibid.

CHAPTER III

THE INVENTOR

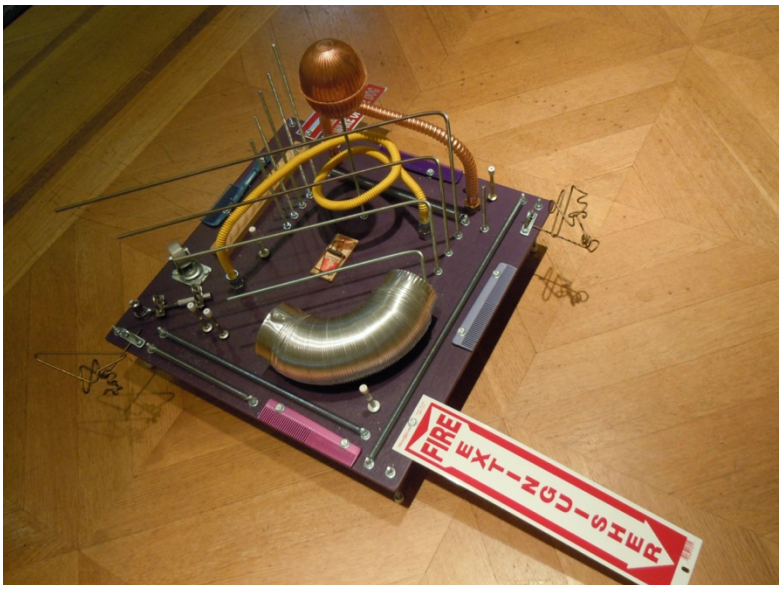
Applebaum's creativity as a composer is largely driven by his ever-increasing boredom with music.[16] Applebaum has made this claim several times – most notably in his TED Talk entitled *The Mad Scientist of Music*, which, at the time of this writing, has been viewed over 4.5 million times on YouTube. In this presentation, Applebaum discusses how this boredom has served as a catalyst for some of his most interesting works. These works include improvisations on his homemade instruments, graphically notated scores, pieces employing a visual set of gestures, pieces that involve rituals, and others.

In 1990, Mark Applebaum built his first homemade instrument, the *Mousetrap*. From the *Mousetrap* onward, the lineage of electroacoustic sound-sculptures includes: the *Mini-Mouse*, the *Duplex Mausphon*, the *MIDI-Mouse*, the six *Micro Mice* (constructed for the Paul Dresher Ensemble), the *Kindermaus* and the *Mouseketier*.[17]

[16] TEDxStanford. "Mark Applebaum: The Mad Scientist of Music." Filmed May 2012. Duration: 16:50. http://www.ted.com/talks/mark_applebaum_the_mad_scientist_of_music?language=en.
[17] Mark Applebaum. "Mouseketier Praxis." Accessed July 12, 2020. http://web.stanford.edu/~applemk/portfolio-works-mouseketier-praxis.html.

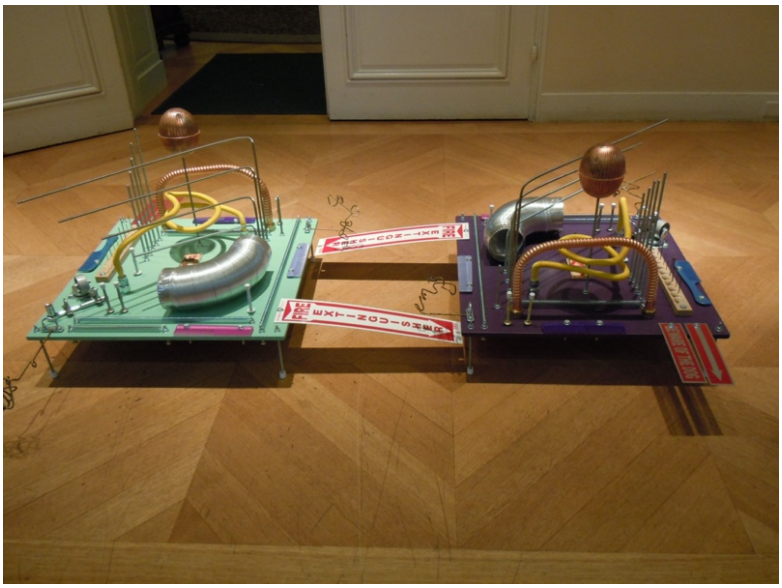
The *Kindermaus*

Example 1 shows the *Kindermaus* (one of two). Example 2 shows how the two *Kindermaus* instruments fit together. The *Kindermaus* was designed for his daughter's show-and-tell class at school. It was originally thought that the students would get to build it as a group project. However, Applebaum decided against that idea when considering the tools needed in order to construct the instruments.



Example 1. The *Kindermaus*.[18]

[18] Mark Applebaum, email to the author, July 28, 2020.



Example 2. Two *Kindermaus* instruments.[19]

The *Mousetrap*

The *Mousetrap*'s body is made from Douglas fir plywood. The instrument is roughly 27.75 inches from the floor.[20] The image below (Example 3) illustrates the *Mousetrap*, while the subsequent table (Example 4) lists its contents.

[19] Ibid.
[20] Mark Applebaum. "Progress Report – The State of the Art after Sixteen Years of Designing and Playing Electroacoustic Sound-Sculptures." Accessed July 17, 2020. https://econtact.ca/12_3/applebaum_soundsculpture.html#1.

Example 3. The *Mousetrap*.[21]

[21] Ibid.

fourteen ¼-inch threaded rods mounted vertically at heights ranging from 6 to 35 inches
five lengths of lead pipe and five lengths of PVC plastic pipe ranging from 5 to 12 inches
large and small galvanized steel caster wheels; three springs stretched horizontally along the soundboard to approximately 9, 17, and 29 inches
two spring doorstops, a metal shoehorn, a steel ratchet
two small and two large plastic hair combs, each consisting of groups of fine teeth and groups of thick teeth
two rows of nails (26 and 28 in number) consisting of four different lengths and thicknesses, pounded into the soundboard at various heights and thus producing assorted "stochastic" pitches
two "kotos" — wire strings (electric guitar strings, usually .016-inch gauge) stretched through eye hooks, pulleys, and turnbuckles so as to allow three separate plucking (and finger vibrato) lengths, each with a unique pitch and collectively tunable
twelve additional wire strings, arranged into two groups of six, mounted underneath the surface of the soundboard on the nearside of the player, each tunable with an individual turnbuckle, and terminating in two locking guitar nuts
a piece of bronze braising rod, twisted into an erratically curled "tam-tree" with a blowtorch
a length of corrugated copper gas tubing, secured to the soundboard at both ends
a square of Astroturf
two pieces of non-skid adhesive cut in the shape of triangles and glued to the soundboard
and, indeed, a mousetrap whose spring was deactivated after many bruised fingers

Example 4. Contents of the *Mousetrap*.[22]

The original design for the *Mousetrap* employed one large piece of wood for the body. However, percussionist Steven Schick programmed Applebaum's *Zero-One* for the *Mousetrap* to be performed at the 1992 Darmstadt Ferienkurse für Neue Musik, creating the need for a solution to transportation issues of the large instrument. Applebaum

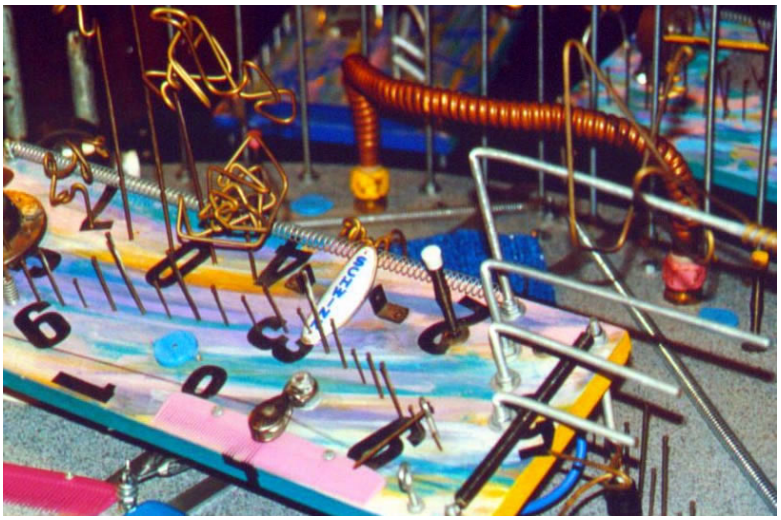
[22] Ibid.

disassembled the majority of the instrument and cut the soundboard in half and folded one side over the other, and finally securing the parts in a custom flight case.[23]

The *Mini-Mouse*

Given the issues of portability caused by the size of the *Mousetrap*, Applebaum's next instrumental creation, the *Mini-Mouse*, was designed to be much smaller. Applebaum refers to it as a miniature *Mousetrap*, as it is small enough to sit on the music desk of a grand piano. It, as well as all of the inventions to follow, can be seen as refinements of the *Mousetrap*.[24] The *Mini-Mouse*'s rectangular soundboard is made of solid pine 21 inches wide, 7 inches deep, and ¾ inch thick. The four legs vary in length so that the back of the instrument slopes downward toward the front at a 36-degree angle. There is just one piezo contact pickup, wired to a ¼-inch jack.[25] Example 5 shows the *Mini-Mouse*.

[23] Ibid.
[24] Ibid.
[25] Ibid.



Example 5. The *Mini-Mouse*.[26]

The *Mouseketier*

The *Mouseketier* was built in the summer of 2001 and serves as Applebaum's most often-used homemade instrument. It consists of three amplified soundboards – blue, pink, and yellow triangles with piezo contact pickups – arranged as tiers.[27] In addition to the three main pickups are five others that work as switches that trigger external processes.[28] The *Mouseketier* contains a variety of objects, which are detailed in Example 6. Many of these objects can be spotted in the picture below (Example 7. "The Mouseketier"). In order to satisfy TSA guidelines, the flight case was designed before the instrument itself. Applebaum credits his wife Joan, for helping design the shape of the *Mouseketier*, as well as suggesting its name.

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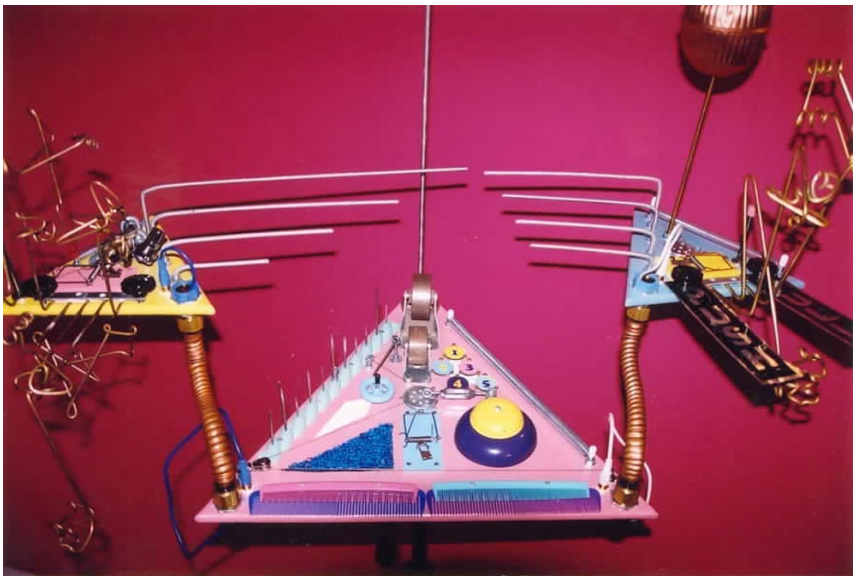
[26] Ibid.
[27] Mark Applebaum. "Mouseketier Praxis." Accessed July 12, 2020. http://web.stanford.edu/~applemk/portfolio-works-mouseketier-praxis.html.
[28] Ibid.

main soundboard (pink)	four plastic hair combs, two large and two small
	a koto string with three segments of varying length, terminating in a guitar tuner, also passing through a turnbuckle, and incorporating a bouncing nail as pioneered on the *Mini-Mouse*
	a small triangle of Astroturf
	a mousetrap (painted blue)
	two metal dome-shaped bells (salvaged from alarm bells with clappers and motors removed, painted purple and yellow)
	a row of 11 vertical nails, consisting of four different sizes, placed one inch apart, and pounded first into a strip of ornamental molding (painted green) and then into the soundboard
	a piece of white, texturized non-skid adhesive
	a small blue wooden wheel that spins loosely on a central axle
	a spring stretched to 12 inches
	large and small galvanized squeaky steel caster wheels
	the various "trigger" pickups
	a 23-inch vertical threaded rod, quickly removable by a wing nut
left soundboard (yellow)	a doorstop with purple end cap
	five thin-diameter "tam-trees", interchangeable and secured under a metal brace that is held in place by two screw knobs
	a mousetrap (painted pink)
	a small steel ratchet
	a small-gauge spring stretched to 4.5 inches
	four graduated threaded rods (ranging from 4 to 16 inches that are angled horizontally and extend to the right and over the main soundboard
right soundboard (blue)	"push" and "pull" door signs (2-inch by 8-inch sheet-metal "thundersheets" that extend off the front edge of the soundboard)
	three thicker-diameter "tam-trees", interchangeable and secured under a metal brace that is held in place by two screw knobs
	a mousetrap (painted yellow)
	a doorstop with pink end cap
	a spring stretched to 8 inches
	four graduated threaded rods (ranging from 6 to 9.5 inches that are angled horizontally and extending to the left and over the main soundboard)
	copper toilet tank floatation bulb perched atop a 9-inch brass stem

Example 6. Contents of the *Mouseketier*.[29]

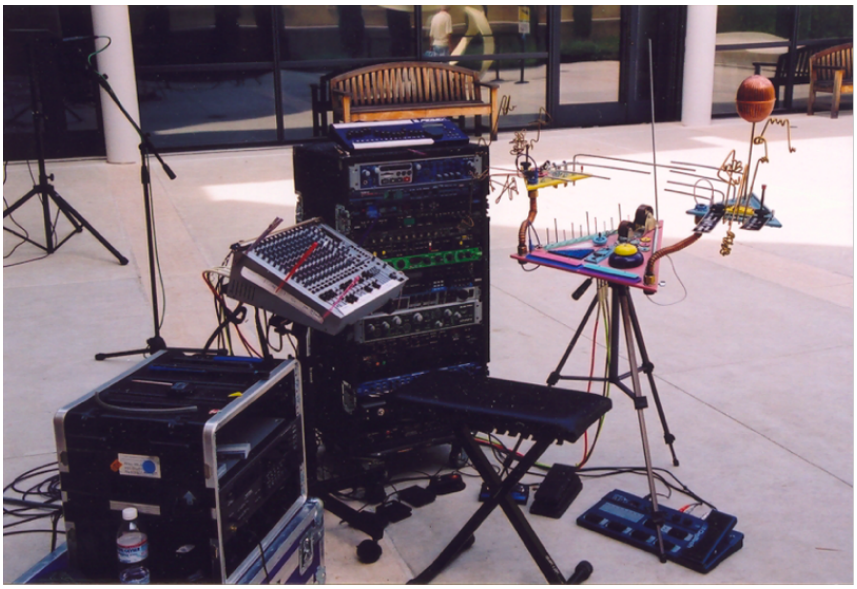
[29] Mark Applebaum. "Progress Report – The State of the Art after Sixteen Years of Designing and Playing Electroacoustic Sound-Sculptures." Accessed July 17, 2020. https://econtact.ca/12_3/applebaum_soundsculpture.html#1.



Example 7. The *Mouseketier*.[30]

Example 8 shows the *Mouseketier* set up for an outdoor performance. In this photo, one can see the mixing board and "cabinet" set up for the live electronics used to alter the natural acoustics of the *Mouseketier*.

[30] Mark Applebaum. "Mouseketier Praxis." Accessed July 12, 2020. http://web.stanford.edu/~applemk/portfolio-works-mouseketier-praxis.html.



Example 8. The *Mouseketier* set up for an outdoor performance.[31]

Aside from an aesthetic appeal, the bronze-colored piping that holds the smaller tiers onto the larger central tier also functions as a housing mechanism for the wiring from the contact piezo microphones. The central tier is then attached to a traditional camera tripod stand for ease of mounting and dismounting. Applebaum states that it now takes minutes instead of hours to set up his contraption for performances.[32] Once the instrument is set up, he then uses a bank of live electronics and effects pedals cued by his feet to manipulate and warp the electroacoustic sounds in countless ways. In his performances, he uses digital delay, various types of reverb, pitch altering, various types of choruses, flangers, and wah effects.

[31] Mark Applebaum, email to the author, July 28, 2020.
[32] Mark Applebaum. "Mouseketier Praxis." Accessed July 12, 2020. http://web.stanford.edu/~applemk/portfolio-works-mouseketier-praxis.html.

Applebaum has cited two main inspirations for his homemade instruments – Tom Nunn and Harry Partch. Applebaum discovered a dust-covered instrument called *the Bug* created by Tom Nunn in an office on the campus of UCSD when he first arrived as a graduate student.[33] This discovery launched a new-found interest in creating instruments.

Nunn is most known for his "skatchboxes". These are small cardboard boxes that have various items glued and taped onboard. They are usually outfitted with contact piezo microphones and make use of hair combs as the primary implement. Through the use of friction, unique sounds are made as the combs scrape over wooden pegs, metal washers, other combs, threaded rods, and more. The *Mouseketier* sees other influences from Nunn's instruments, such as the *Crustacean* (1976) and the *Sonoglyph* (1992). The *Crustacean* is based off of the waterphone and contains numerous bronze rods that are brazed onto a stainless-steel plate.[34] The *Sonoglyph* uses a three-quarter inch plywood sheet and is outfitted with various sizes of nails, combs, threaded rods, and more.[35]

Harry Partch, another influence of Applebaum's, was an American composer and instrument maker. Partch is most well-known for his large theatric works that incorporated soundtracks provided by his own instruments. Partch strictly used "just intonation" for his pieces and notoriously rejected Western music. His homemade instruments such as the Diamond Marimba, the Quadrangularis Reversum, and the Chromelodeon embraced microtonality. While Applebaum's instruments do not employ

[33] Mark Applebaum. "Progress Report – The State of the Art after Sixteen Years of Designing and Playing Electroacoustic Sound-Sculptures." Accessed July 17, 2020. https://econtact.ca/12_3/applebaum_soundsculpture.html#1.
[34] "Tom Nunn Demonstrates the Crustacean." https://www.youtube.com/watch?v=xYFLiE1DSQI.
[35] "Tom Nunn Demonstrates the Sonoglyph." https://www.youtube.com/watch?v=TO1N59Y4RUM.

microtonality on a level akin to Partch, their unique quality of being a "one of one" creation is similar. Partch's works are still performed by instruments of his creation. Similarly, Applebaum's works for the *Mousetrap* or *Mouseketier* can only be performed on those particular instruments.

CHAPTER IV

THE METAPHYSICS OF NOTATION

The Metaphysics of Notation (2008) is a 72-foot wide, handwritten graphic score, divided into twelve 6-foot by 10-inch panels, requested by the Cantor Arts Center in Stanford, California on the campus of Stanford University. The installation also includes two hanging mobiles, and no clear written or verbal instructions. The visual score was on display in the museum for one year (2009). During this year, artists from around the country traveled to the museum to perform realizations of the score from noon to one o'clock PM each Friday. During the remaining days of the week, the piece was perceived as visual art. It should be stated that Applebaum has never performed this work. His reasoning, according to an interview with the writer, is because he did not want to create an image or set a precedent for what the piece should be.[36] However, a list including each of the performers and their chosen instrumentation can be found at the end of this chapter. Additionally, during the time of the piece's composition, Applebaum stated, "I'm absolutely certain that this is music, and yet I hear no sound in my head while I'm composing it. I can't tell you how wonderful and liberating that is."[37]

[36] Mark Applebaum, phone interview by author, May 12, 2020.
[37] *There's No Sound in My Head: Mark Applebaum's Metaphysics of Notation*, directed by Robert Arnold (Innova Recordings, 2010), DVD disc.

An inscription, displayed in the museum at the time of *The Metaphysics of Notation*'s inhabitancy reads:

> The score is a work of visual art teeming with evocative glyphs and densely arranged pictographs. The work consists of twelve pen and ink drawings (drawn with straight edges, French curves, drafting templates, and free hand), a print with the twelve panels at half-size arranged vertically, and two hanging mobiles from which dangle pictographic fragments. The meaning of its visual figures is deliberately left undefined by the composer; each performer(s) is invited to make a sonic realization of the score by articulating its signs according to a personal interpretation.[38]

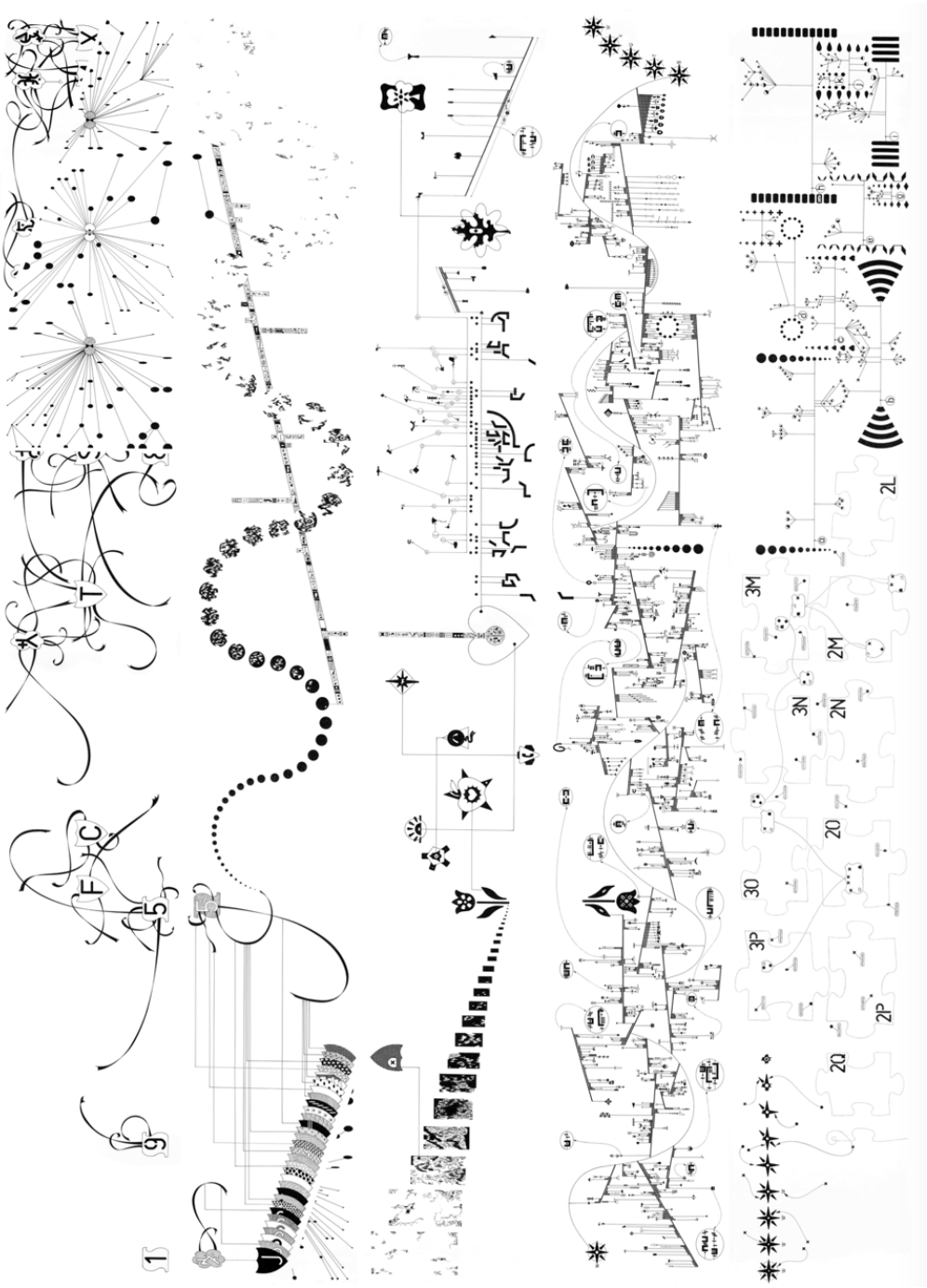
The piece was displayed in the main atrium area of the museum. With a considerable amount of marble structures and a tall ceiling, the reverberation in the space that housed *Metaphysics* was significant. When its exhibition ended, the panels were removed and now currently reside in the home of the composer. One year after the piece originally existed in the Cantor Arts Center, Robert Arnold created a twenty-minute documentary entitled "There's No Sound In My Head," with interviews from those familiar with Applebaum's work, including his former teacher, Dr. Brian Ferneyhough. This short documentary was released by Innova Recordings on a DVD in 2010 that included a "Metaphysics Mix," highlighting one minute of each of the forty-five performances that took place, as well as eight- and sixteen-minute scrolling versions of the score that could be used for future performances.

Each of the twelve panels were hung in between the pillars in the space, with the pillars serving as visual disrupters to the horizontal connectivity of the 72-foot long piece.

[38] "Mark Applebaum, Associate Professor of Composition at Stanford University." https://vimeo.com/253504465.

However, with close examination, one will notice themes and ideas that connect the piece to one another, both vertically and horizontally. For example, at the bottom of one of the twelve panels, one will notice a small airplane pointing upward, toward the ceiling. On a corresponding panel, which would have been in a different location at the time of display, a counterpart illustration shows an airplane pointing in the opposite direction, downward toward the floor. There are multiple instances of visual connection such as this that occur throughout the length of the visual score of *The Metaphysics of Notation*.

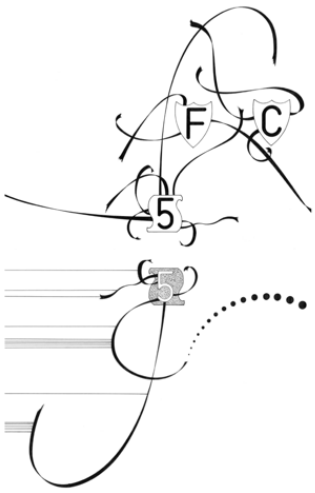
The picture below (Example 9) illustrates panels 3, 4, 5, 6, and 7 in a stacked arrangement (landscape orientation, viewable by turning the page ninety degrees clockwise).



Example 9. Panels 3, 4, 5, 6, and 7 of *The Metaphysics of Notation* in landscape view.[39]

[39] Mark Applebaum. "Handbook for the Metaphysics of Notation." http://web.stanford.edu/~applemk/other-materials/HandbookForTheMetaphysicsOfNotationOriginalDraft.pdf.

Upon examination, one may be able to spot multiple instances in which both vertical and horizontal visual connections can be made. For instance, at the bottom of panel 3, one can see the number 5 inside of a shape that resembles a scroll. At the top of panel 4 appears a "shadowed" version of this scroll. Furthermore, one can notice a long, curved line that extends from the top of the "5 scroll" in panel 3. This line extends vertically upward, curves to the right, and bends downward. Its counterpart in panel 4 extends downward, curves to the left, and bends upward. This relationship is further detailed in Example 10.

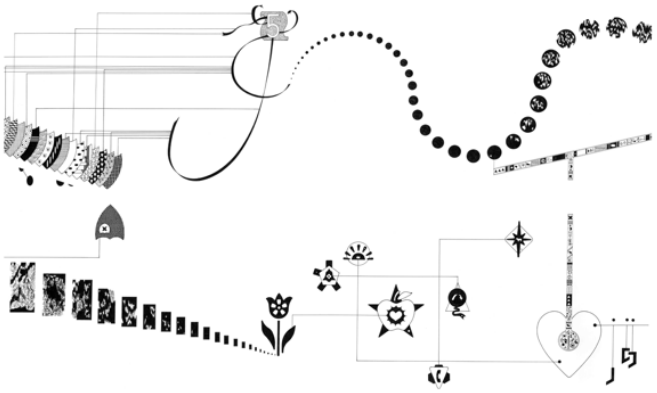


Example 10. Relationship of "scroll 5s" in panels 3 and 4.[40]

In the bottom left corner of panel 4, one will notice a descending cascade of shapes that resemble shields. In the top left corner of panel 5, a singular inverted shield is present as illustrated in Example 11. Furthermore, a stem descends from panel 4 that

[40] Ibid.

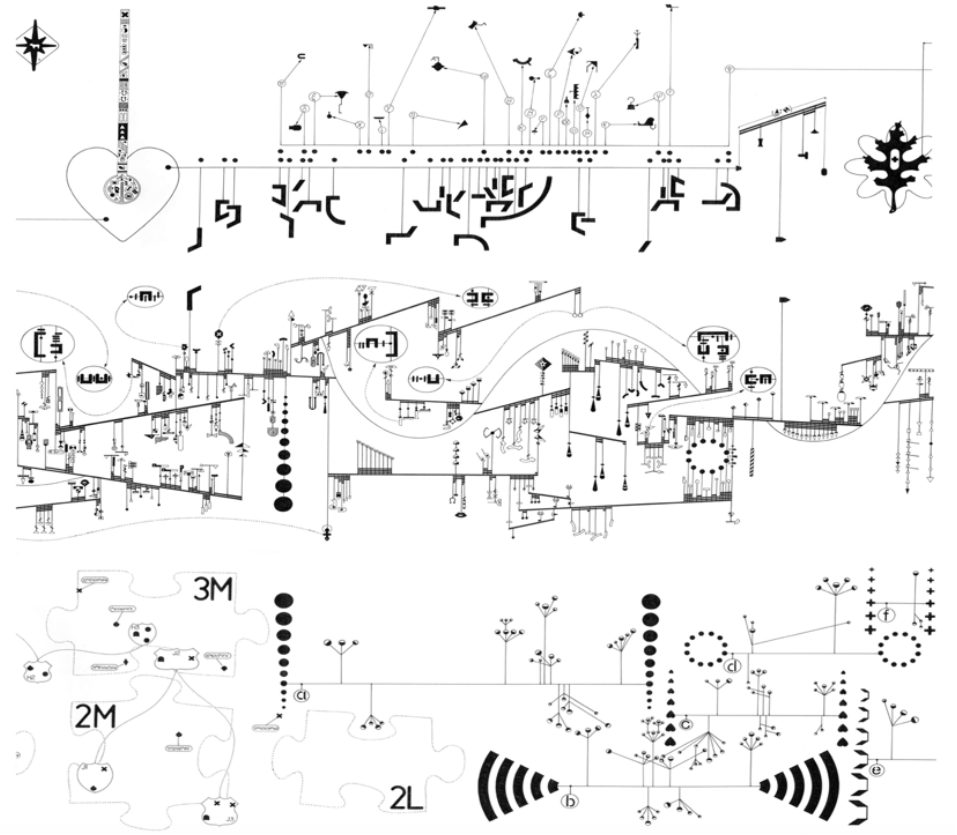
appears to connect to a glyph on panel 5 that Mark Applebaum's daughter, Charlotte, has affectionately named the "heart guitar".[41]



Example 11. Inverted shields and "heart guitar" connection.[42]

Two more examples of vertical relationships in *The Metaphysics of Notation* can be found in panels 5, 6, and 7 (Example 12). Here, one can see what Applebaum refers to as a "hockey stick looking doodle" or "dangling angle" in panel 5 that connects with an upside-down version of itself on panel 6. One can also notice the dots at the bottom of panel 6 that increase in size as they descend on the page and how they visually connect to the dots on the top of panel 7 that decrease in size as they descend on the page.

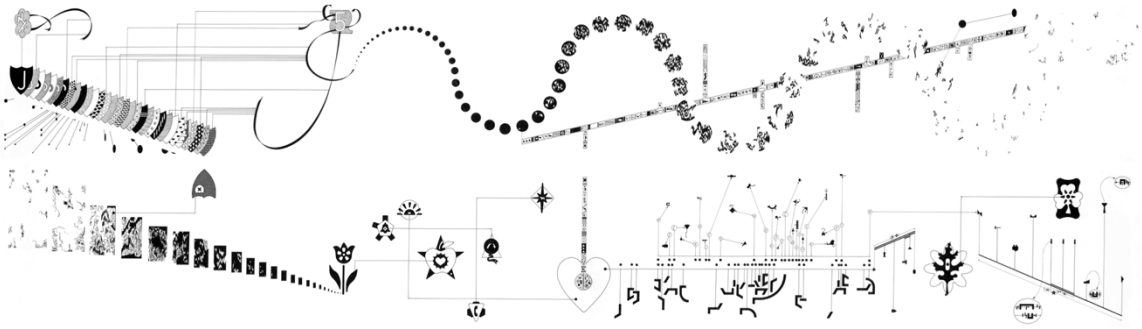
[41] *There's No Sound in My Head: Mark Applebaum's Metaphysics of Notation*, directed by Robert Arnold (Innova Recordings, 2010), DVD disc.
[42] Mark Applebaum. "Handbook for the Metaphysics of Notation." http://web.stanford.edu/~applemk/other-materials/HandbookForTheMetaphysicsOfNotationOriginalDraft.pdf.



Example 12. “Dangling angle” and “descending dots” connections in panels 5, 6, and 7.[43]

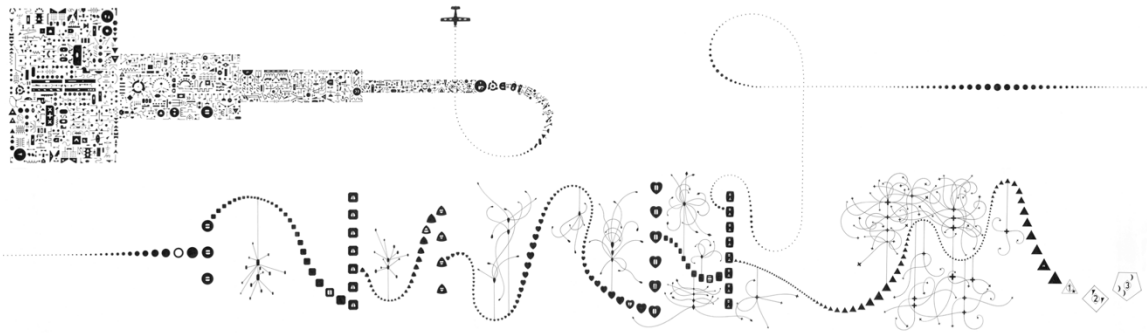
While examining the vertical relationships between panels, one will also note the horizontal similarities. In Example 13, showing panels 4 and 5, note the solid circles that begin toward the middle of panel 4. These circles increase in size from left to right. As they increase in size, they become more distorted and fragmented. Subsequently, the fragments then begin to materialize and solidify into the tall rectangles found near the left side of panel 5, showing a horizontal visual connection.

[43] Ibid.



Example 13. Horizontal fragmentation in panels 4 and 5.[44]

Though they are found in abundance, the final example of panel relationships coincidentally shows both a vertical and horizontal connection between the same two panels.



Example 14. Temporal puzzle between panels 9 and 10.[45]

In Example 14, what Applebaum refers to as "a paradox of chronology" and a "temporal puzzle" exists[46]. In panels 9 and 10, a series of small circular dots clearly appear to connect vertically to a series of small circular dots near the middle-right side of

[44] Ibid.
[45] Ibid.
[46] Ibid.

both panels. In panel 9, these dots run off of the page as the viewer looks from left to right. At the left side of panel 10, the dots from panel 9 appear to continue into this panel. However, what is unclear is where the true "beginning" of this idea occurs. Applebaum states, "It is a paradox of chronology that is evident in the visual domain but cannot be rationally represented in the time – and one could say *shape* – of musical sound."[47]

The Metaphysics of Notation was written in the same year Applebaum composed his first score of graphic-only notation (*56 ½ ft.*, 2008), that is, a piece that entirely abandoned the use of the traditional notehead and stem. Since 2008, Applebaum has written numerous works that incorporate graphic notation, either as the sole notational style of the piece or of majority use. Some of the other notable pieces that incorporate graphic notation are: the *Wristwatch* series, *Composition Machine #1*, *Medium*, *40 Cryptograms*, *Coat Room*, *Control Freak*, and others. Applebaum, in his program notes for *Composition Machine #1*, states:

> But why sound like *me*? If you sound like *me* then everyone who plays this piece will sound like *me*. And that makes one piece, whereas I want this provocation – this impetus – to sound like many pieces. And besides, I'm bored of *me*, I need less *me* in my life, not more. I could stand a little bit of *you*. (Or a lot of *you*).[48]

The point Applebaum is making here is that he grows tired of music in the traditional sense. In fact, he has stated in numerous interviews that he is tired of music and that he even does not like music. The *Composition Machine #1* program note above

[47] Ibid.
[48] Mark Applebaum. "Program Notes to *Composition Machine #1*." Self-published, 2014.

is meant, in this case, to illustrate Applebaum's desire to create a new platform from which interesting new sounds can be heard.

Performer(s) and Ensembles	
Sam Adams	Victor Lin
Liz Allbee	Alison Lowell
Michael Berger	MC Lars
Beta Collide	Andy Meyerson
Andrew Bliss	Dave Mihaly
Dale Boland	Be'eri Moalem
Doug Carroll	Devin Mooers
Chris Chafe	MNP
Laura Chau	Tom Nunn
Ted Coffey	Noah Phillips
Christopher Costanza	Pink Canoes
Joshua Crumbly	John Pobojewski
Joel Davel	Vic Rawlings
Paul Dresher	Jane Rigler
Cenk Ergün	Gino Robair
Jonathan Erman	Dennis Shafer
Tim Feeney	Margaret Schedel
Brian Ferneyhough	Adam Sheppard
Corey Fogel	Alan Shockley
Blair Foley	[sic]
Debra Fong	Ed Silberman
Heather Frasch	Sō Percussion
Philip Gelb	Stanford MoPhO
Matthew Goodheart	Michael Straus
Anthony Green	T^2
Rob Hamilton	Sudhu Tewari
Ron Heglin	Josh Thurston-Milgrom
Ivor Holloway	Thomas Tissot
Matt Ingalls	Ken Ueno
Graeme Jennings	Erik Ulman
Scott Jones	Cobi van Tonder
Julia Jurkiewicz	Bonnie Whiting Smith
K. Flay	Patrick Wolff
Rob Kohler	Patience Young
Fernando Lopez-Lezcano	

Example 15. List of *Metaphysics* performers.[49]

[49] *There's No Sound in My Head: Mark Applebaum's Metaphysics of Notation*, directed by Robert Arnold (Innova Recordings, 2010), DVD disc.

CHAPTER V

APHASIA

Aphasia (2009) is Mark Applebaum's most popular and performed work. It was written for a vocalist or actor performing "sign language" with tape and has a duration of about nine minutes.[50] The piece was commissioned for Nicholas Isherwood and the *Stockhausen-Isherwood Project* (a concert of works by Applebaum, Stockhausen, Robert H.P. Platz, Jean Claude Risset, Daniel, Teruggi, Enrico Cocco, and Jeffrey Stolet) by the GRM – Le Groupe de Recherches Musicales (Paris), Centre de Recherches et de Formation Musicales de Wallonie (Brussels), Musica Experimento (Rome), the University of Oregon (Eugene), and the Stanford University Lively Arts (Palo Alto).[51]

The title of *Aphasia* refers to the loss of the ability to understand or express speech – a condition caused by brain damage. Aphasia is typically a sign of another condition such as a stroke or a brain tumor. Someone suffering from aphasia may speak in sentences that do not make sense, speak in short or incomplete sentences, speak unrecognizable words, substitute one word or sound for another, or may not understand another person's conversation.[52]

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[50] Mark Applebaum. "Aphasia." http://web.stanford.edu/~applemk/portfolio-works-aphasia.html.
[51] Ibid.
[52] "Aphasia". from Mayo Clinic. Accessed July 20, 2020. https://www.mayoclinic.org/diseases-conditions/aphasia/symptoms-causes/syc-20369518.

Aphasia was written originally for "singer and tape".[53] The role of "singer" may be taken by any performer, not necessarily a vocalist. The tape, an idiosyncratic explosion of warped and mangled sounds, is made up exclusively of vocal samples, all of which were sung by Isherwood and transformed digitally.[54] In alignment with the quirky sounds of the audio tape track, the "singer" performs an elaborate set of hand gestures, an "assiduously choreographed sign language".[55] Each visual gesture corresponds to the tape in a synchronous manner. With a catalog of visual gestures, it is important to note that the "singer" produces no sound in a performance of *Aphasia*. With humorous intention, Applebaum states, "...*Aphasia* may be the first piece in the vocal canon that can be performed even when the singer has laryngitis."[56] Applebaum describes in his performance notes the overall aesthetic of the piece:

> The soloist is seated on a chair (a simple one without arms, or a low stool) at center stage and well-lit (by a spotlight, if possible). The soloist makes various choreographed hand gestures in synchrony with the "tape" (a two-channel audio CD). The hand gestures must be precisely synchronized with the sound, the illusion being that the gestures cause the sound or vice versa.[57]

With tempi changing seemingly every measure and a plethora of complex rhythms, Isherwood deemed a performance of the piece to be impossible. This led to a different version of the piece that Applebaum refers to as *Aphasia – Dialect*. This version is simply a performance *Aphasia* with the same audio tape track with the use of

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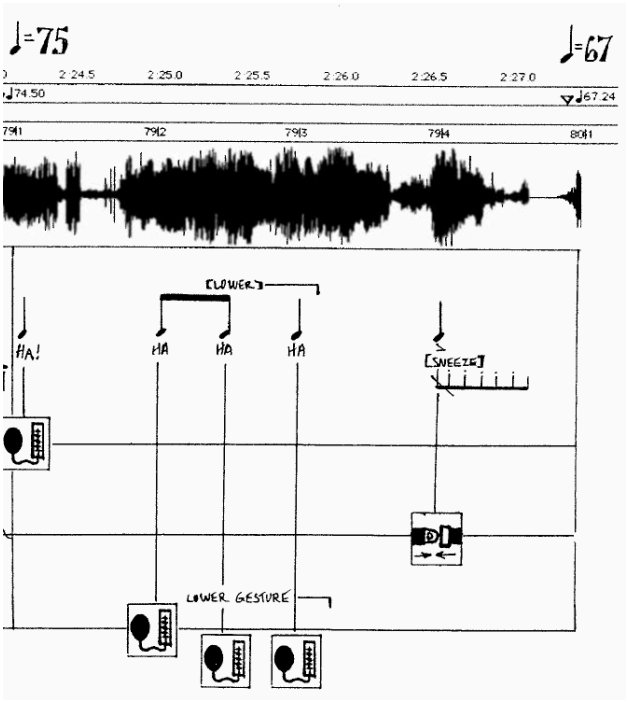
[53] Mark Applebaum. "Program Notes to *Aphasia*." Self-published, 2010.
[54] Mark Applebaum. "Aphasia." http://web.stanford.edu/~applemk/portfolio-works-aphasia.html.
[55] Ibid.
[56] Ibid.
[57] Mark Applebaum. "Program Notes to *Aphasia*." Self-published, 2010.

improvised gestures, opposed to the notated ones. Seeing Isherwood's claim of impossibility as a challenge, Applebaum learned the piece himself. He states that it took him four months of constant work to memorize it. He produced a video of himself performing the piece, which, at the time of writing, has been viewed over 70,000 times.

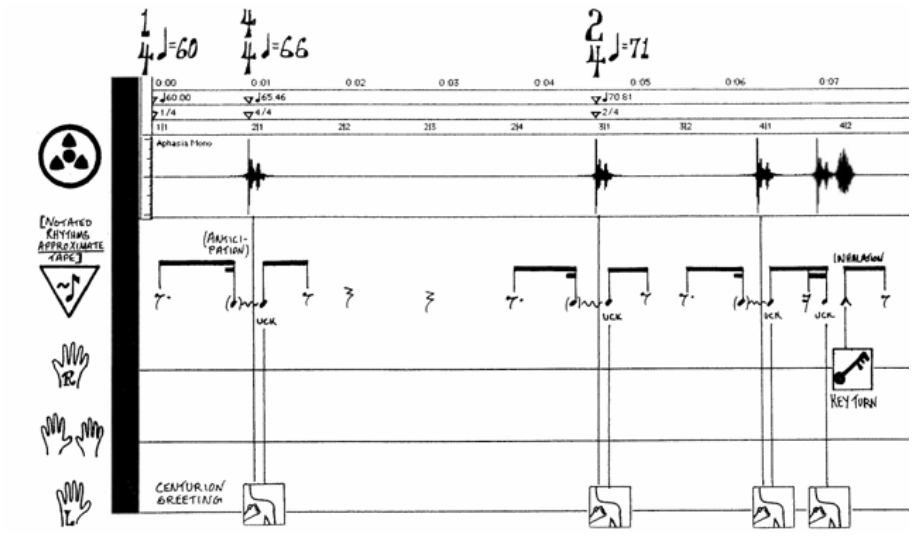
Applebaum has created a sign language "catalog," including over 200 gestures that he has employed in other pieces. *Aphasia*, while being Applebaum's most performed work, is just one of many pieces that incorporate the use of visuals and gestures in performance. In fact, gestures and visual components in composition have been the source of many of Applebaum's works dating back to 1995, when he composed *Tlön*, a work for three conductors and no performers. This composition was born from witnessing an aggressive argument that took place in sign language. Applebaum claims that while the argument produced no decibels to speak of, it was affectively a very loud experience.[58]

The gestures employed in *Aphasia* can described as containing any of the following qualities: the physical height in which the gesture takes place (Example 15), one- versus two-handedness required for the execution of the gesture (Example 16), whether or not the gesture lends itself to a static pose (Example 18), variable rhythmic articulation (Example 19), or a gesture with continuous motion (Example 20). Example 16 below, displaying the "Blood Pressure" gesture, includes the indication of a lowered gesture on the "and" of count two as well as on count three.

[58] TEDxStanford. "Mark Applebaum: The Mad Scientist of Music." Filmed May 2012. Duration: 16:50. http://www.ted.com/talks/mark_applebaum_the_mad_scientist_of_music?language=en.



Example 16. "Blood Pressure" gesture with height indication.[59]



Example 17. Handedness and staff identification.[60]

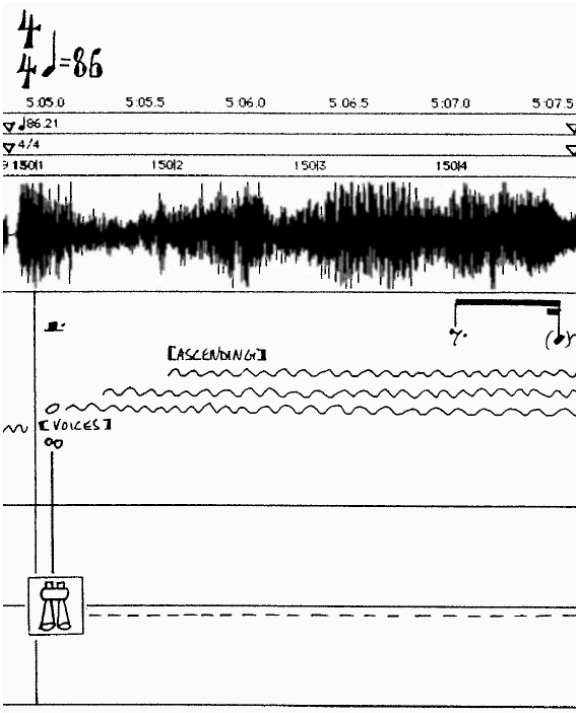
[59] Mark Applebaum. "Program Notes to *Aphasia*." Self-published, 2010.
[60] Ibid.

Example 17 illustrates the information that is provided on every staff throughout the entire score. From top to bottom: an indication for the audio tape part, a notated approximation of the rhythms that occur in the audio tape part, a "right hand" indication, a "both hands" indication, and a "left hand" indication. In every instance that a gesture occurs in the piece for the first time, a small box of text is present to inform the performer what gesture the symbol indicates. In Example 17, one can see a "Centurion Greeting" indication. The symbol to the right of that text essentially serves as a notehead for the rhythms used in performing that gesture. With the goal of ensuring every performer understands the indication of each gesture symbol clearly, Applebaum has included an appendix of *Aphasia* gestures along with his score. This appendix describes each gesture in great detail to the performer. For example, the appendix inscription for the first gesture in the piece, "Centurion Greeting", states:

> Left arm crosses chest to place closed fist against torso near opposite shoulder (just under clavicle), with elbow bent severely, and back of hand to the audience as in a Roman centurion greeting. Note: this gesture should not produce an audible thump on the body; as such, it may be made to a position just slightly in front of the torso.[61]

The "Binoculars" gesture shown in Example 18 is an example of a gesture with a static pose. Example 18 is measure 150. The static pose is notated by the use of dashes or hyphen-like indications that follow the gesture box.

[61] Ibid.



Example 18. Gesture with static pose.[62]

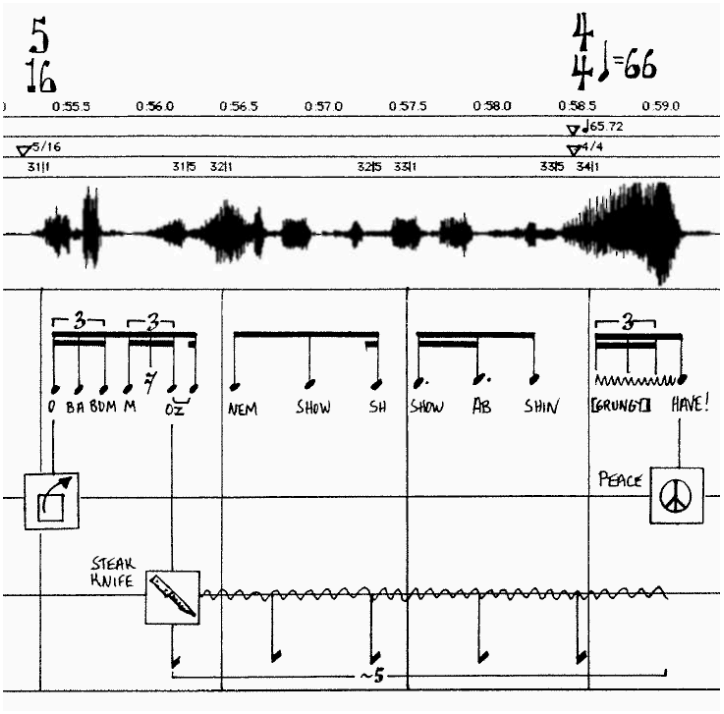
Example 19 is an example of a gesture with variable rhythmic articulation.

The “Steak Knife” gesture is described as:

> The left hand, grasping an imagined fork with tines turned downward, secures an imagined steak on a plate in front of the lower torso while the right hand, grasping an imagined knife, saws back and forth on the steak. Note: approximately five reciprocations are [sic] an appropriate tempo for the passage.[63]

In Example 19, note the presence of a tilde (~), which indicates that the proposed five articulations are an approximation.

[62] Ibid.
[63] Ibid.

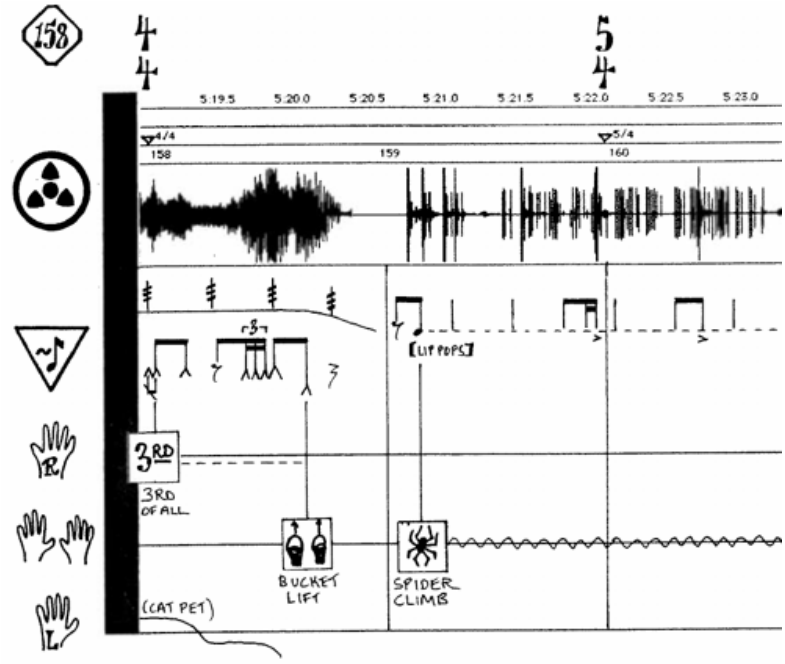


Example 19. Gesture with variable rhythmic articulation.[64]

Below, Example 20 shows one of many instances in which a continuous motion is required to perform a gesture. In this case, the "Spider Climb" gesture is followed by an undulate or "squiggly" line. The appendix defines the "Spider Climb" gesture as:

> The left thumb touches the right index finger (the remainder of both hands relaxed) and is released – but only after the left index finger "climbs" up to touch the right thumb which is in turn released – but only after the hands return to their original position with right index finger touching left thumb; the pattern is repeated again and again in a climbing motion (as done in accompaniment to the song *The Eensy-Weensy Spider*) with the hands centered and starting in front of the lower torso and climbing to the height of the neck.[65]

[64] Ibid.
[65] Ibid.



Example 20. Gesture with continuous motion[66].

[66] Ibid.

Aphasia Performance Guide

In the preparation of *Aphasia*, one may discover several tactics that may prove useful towards a successful performance of the piece. First and foremost, the performer is encouraged to take advantage of the rehearsal tracks that Applebaum has made. Totaling 265 tracks, these are especially helpful to aid in memorization. The tracks are 16-bit, 44.1k stereo WAV audio files that have been uploaded to a DVD-ROM.[67] The rehearsal tracks serve three purposes, according to Applebaum. First, they allow the performer to decipher which audio sounds match up with which visual gestures. Second, they allow the performer to repeat a smaller section of the piece, which can prove extremely useful in the memorization process. Third, the tracks appear in an order that would suggest a sensical "rehearsal order" for practice purposes.[68]

The rehearsal tracks are offered in varying lengths that are useful depending on where the performer is in the learning process. For example, the first twelve tracks of the total 265 are dedicated to the first page alone. Example 21 illustrates the contents of the first twelve tracks.

[67] Ibid.
[68] Ibid.

track number	measure(s) in track
1.	measure 2
2.	measure 4
3.	measures 1-4
4.	measures 6-8
5.	measure 9
6.	measures 9-10
7.	measure 11
8.	measure 12
9.	measure 13
10.	measures 11-13
11.	measures 9-13
12.	measures 1-13 (all of page 1)

Example 21. Contents of *Aphasia* rehearsal tracks 1 through 12.

A similar organization for the rehearsal tracks for pages two and three follows. Then, Applebaum includes a rehearsal track for pages two and three together. While extracting pieces and parts of various pages, Applebaum also combines larger sections of the piece together so that the performer may rehearse multiple pages at a time. For example, included are rehearsal tracks for pages one-five, six-nine, ten-thirteen, and fourteen-eighteen. Track #265 is an audio file of the complete piece. The writer suggests taking advantage of the "repeat" function in a media player such as iTunes for ease of repeating various sections.

While in the memorization stage, it is also recommended that the performer rehearse in front of a mirror. Furthermore, the performer may wish to video record themselves to ensure the gestures appear to effectively communicate their descriptions. The gesture may unknowingly appear differently from in front of the performer than from the perspective of the performer themselves.

The physical appearance of the performer should also be considered. Applebaum asks that the performer not appear to be "searching" or to project a process of discovery or self-realization. Rather, he asks for the performer to convey the "flattest of affects" and to appear robotic, steady, silent, and habitual.[69] The performer's eyes should remain fixed on the audience, but without looking around at various points in the performance space. Additionally, while the visual gestures are mostly simple in nature, the composer's interest resides in the concrete physicality of each gesture, not its association with any meaning its action might suggest.

Another key element of memorizing *Aphasia* is memorizing the sounds in the audio track and the order in which they occur. The rehearsal tracks may be used in order to facilitate this process. In other words, it is recommended that the rehearsal tracks be placed into a playlist that the performer may travel with, so that they can be listened to regularly and conveniently. Having the quirky sounds memorized and associating them with the physicality of the gestures is, after all, the crux of the piece. Over time, one may find that the quirky, seemingly random sounds will take on a language of their own.

[69] Ibid.

CHAPTER VI

ECHOLALIA

Echolalia (2006) is for "22 Amplified and Signal Processed Dadaist Rituals".[70] Applebaum describes *Echolalia* as an autonomous work that is extracted from Section III of his piece entitled *Asylum*. *Asylum* was written for nonet and percussion soloist and was commissioned by the Vienna Modern Festival in 2004. Karlheinz Essl, a composer and friend of Applebaum's, invited Applebaum to perform in the Essl Museum. While visiting Essl in Klosterneuburg for his performance, Applebaum had the opportunity to visit Essl's father's private art collection. It was during this visit that Applebaum was inspired by the architecture of this private warehouse to compose *Asylum*. In the main lobby and atrium area, a large staircase winds its way up to the top of the building. In *Asylum*, each member of the nonet, is stationed in various locations along this staircase, while the percussion soloist makes their way from the top to the bottom. There are doorways that extend from the platforms on the staircase to wings that are not open to the public. There are bars that enclose this staircase. Applebaum states that the bars on the windows created a feeling of a "cage or zoo-like" situation, giving *Asylum* its name.[71] While Applebaum performed the premiere of *Echolalia*, the percussionist that performed the solo part for the premiere of *Asylum* was Berndt Thurner.[72]

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[70] Mark Applebaum. "Program Notes to *Echolalia*." Self-published, 2006.
[71] Mark Applebaum, phone interview by author, May 12, 2020.
[72] Ibid.

After reading the *DSM-4* (the *Diagnostic and Statistical Manual of Mental Disorders*), Applebaum created metaphors for the descriptions of these studies and translated them into gestures and actions for *Echolalia*. While Applebaum has stated that each of the twenty-two rituals does not specifically represent a particular disorder in the piece, he has, in fact, stated that the twenty-two rituals can be described in one of the following four ways: (1) combining/attaching, (2) mixing/syncretizing, (3) separating/atomizing, and (4) treating/deforming. In *Echolalia*, the score states that a "'subject' attempts a musical expression but suffers an apraxia that manifests itself in a completely different medium, as a series of twenty-two Dadaist rituals performed in rapid succession."[73] The following Example shows each of the twenty-two rituals and their full descriptions as found in the score.

[73] Mark Applebaum. "Program Notes to *Echolalia*." Self-published, 2006.

22 Dadaist Rituals
1. Type “Echolalia” on a manual typewriter. Then change electronics.
2. Rip paper from the typewriter and tear it into pieces (a few strips).
3. Put the pieces of paper into an old, hardcover book. Slam the book shut.
4. Tape the book shut with duct tape. The duct tape should be noisily pulled from a roll and torn. One or more pieces may be used to secure the book. Having the roll pre-set with a “tab” of tape will help speed this ritual.
5. Drill a hole through the book with an electric drill. The hole must be large enough to easily accommodate a wire. A cordless drill pre-set with the proper drill bit is recommended. Thread a piece of heavy but flexible wire through the hole in the book. Twist the wire so that the book is secure and can hang from the wire.
6. Break some sticks. The sticks may be branches from trees, industrial wooden dowels, dry spaghetti, or an alternative. Some sticks may be broken in more than one place while some may remain unbroken.
7. Affix some of the broken sticks to a heavy brick with rubber bands. The rubber bands may be noisily snapped against the brick during this process.
8. Drink some colored liquid from a small plastic cup (this may be a cheap, breakable wine cup as used at a party or reception). Smash the cup into pieces with the brick (with attached broken sticks) against a table or the floor. Another alternative is to place the cup on an additional brick, thus smashing the cup between two bricks.
9. Place the broken cup shards into a paper bag. Close the bag, staple the bag shut, and crumple (squash, compact) the bag. The stapler may be a typical desktop model; however, a portable, hand-held model (like a train conductor’s ticket marker) is preferred (e.g. ace clipper model). Place the bag in a short aluminum tube. The tube can be a piece of HVAC ductwork, the exhaust tube for a clothes dryer, or equivalent.
10. Crush/flatten the tube by stomping on it.
11. Place the tube on a large piece of paper (such as butcher paper or packing paper). The paper can be pre-set or it can be dispensed and torn from a large roll. Using a large marker (preferably a noisy, squeaky one), hastily trace the outline of the crushed tube on the paper. Remove the tube. Using a large, old pair of scissors, hastily cut out the paper along the outline. Set the paper on a table.
12. Stamp the paper with one or more stampers (such as a library or passport stamper). The stamper can be the kind with a self-inking mechanism that needs only be pressed down, or it can be a manual stamp which is first pressed onto an ink pad. In addition, optional paper stamps may be licked and affixed to the paper. After stamping, quickly sign or initial the paper and write the date and time with a pencil or pen.
13. Put the stamper(s) and pen into a distinctive container. The container should already contain several hidden objects: a can of spray pain, a reel of magnetic audio tape, and a bunch of carrots. Close the container by securing its lid. Shake the container. Open the container, remove the can of spray paint, reel of magnetic audio tape, and bunch of carrots and set them aside.

14. Pickup up a manual wood saw, cut a piece of wood from a board. The resulting piece must fulfill two later functions: it will serve as a kitchen cutting board; and it will be the exact size so as to serve as the lid of a wooden box or crate. The board should be secured so that sawing is made easy and safe. It should be pre-measured and marked accordingly. In fact, some or most of the cutting may be pre-completed so that the player can finish the cutting in a matter of just a few seconds. Furthermore, strategically placed pre-drilled holes in the wood will assist the player when nailing it to the box or crate later.
15. Using a large kitchen knife, roughly cut the carrots on the sawed piece of wood (the cutting board). Place the cut carrots on the center of the paper (the paper in rituals 11 & 12). Fold the paper closed over the carrots (left over right, right over left, front over back, back over front – as one might collect objects in a handkerchief).
16. Wind a length of chain around the bundled paper (with carrots inside) and secure it with a padlock. Put the locked bundle – and the kitchen knife – inside a wooden box or crate.
17. Close the wooden box with its lid (the cutting board). Nail the lid to the box using a hammer and several nails. The last nail should be especially long and should be left protruding from the lid like a small antenna. In other words, the last nail should not be driven all the way into the box.
18. Using the attached wire, hang the book on the nail protruding from the box. Let the book dangle alongside the box in view of the audience. Take care to leave some of the nail free as an axle for the reel of magnetic tape in ritual 20.
19. Pick up the can of spray paint and shake it briefly, making the characteristic spray paint can sound. Spray a spot on the cover of the book.
20. Set the reel of magnetic audio tape on the nail protruding from the box. The nail will function as an axle. Spool off some audio tape while walking away from the box and toward the balloons. Wind (attach, secure) the end of the magnetic audio tape around a stand which also holds two balloons. Cut the excess audio tape with the scissors.
21. Pop the two balloons with the scissors. The second balloon secretly contains a triangle beater. The player may catch the triangle beater as it falls from the popped balloon, or the balloon may be placed over a tray or other landing pad from which the player may retrieve the beater. Alternatively, the beater may be attached to a thin string which is threaded through the balloon enclosure and tied to the stand; when the balloon is popped the beater will dangle from the stand and may be quickly torn away.
22. Pause to “discover” the beater. Strike triangle once. The piece is complete after the sound of the triangle decays.

Example 22. List of twenty-two Dadaist rituals in *Echolalia*.[74]

[74] Ibid.

The parts for the nine performers for *Asylum*, the piece from which *Echolalia* is derived, are meant to be theatric manifestations of shared psychosis and dissociative identity disorder, specifically interaction of schizophrenia, stuttering, obsessive-compulsive disorder, dissociative fugue, paranoid personality disorder, bipolar disorder (with separate manic and depressive episodes), borderline personality disorder, attention-deficit/hyperactivity disorder, sleep terror disorder, intermittent explosive disorder, dementia due to head trauma, delusional disorder (with superimposed manifestations of grandiose, somatic, erotomanic, jealous, and persecutory behaviors), narcissistic personality disorder, avoidant personality disorder, dependent personality disorder, narcolepsy, schizotypal personality disorder, panic disorder with agoraphobia, histrionic personality disorder, anti-social personality disorder, obsessive-compulsive personality disorder, and Tourette's disorder.[75] Applebaum states that during a performance of *Asylum*, each member of nonet will exhibit one of the aforementioned disorders and will begin to show symptoms of additional disorders as they interact with other members of the nonet.

Echolalia **Performance Guide**

Performers of *Echolalia* will face various challenges when performing and preparing this work, most namely the challenge of coordinating the electronic element of the piece and conveying the correct character of the "subject" when in performance. In the score, Applebaum states that he used a Muse Receptor hardware VST plug-in player,

[75] Ibid.

but that individuals can make their own arrangement. He also illustrates the exact combination of electronic sounds used for each of his twenty-two rituals. For instance, in Example 23, a combination of white and black boxes shows which effects he is using. In this particular instance, he is using the effects in channels one, four, and five of the total sixteen options. Additionally, the effects in channels two, three, and six through sixteen are muted.

Example 23. Indication of effects channels in ritual six of *Echolalia*.

Applebaum acknowledges that not everyone will have access to his particular electronic set-up. He approves the performer to be creative and select their own interesting sounds. He only asks that adjustments be made according to the "taste and the acoustics of the performance space".[76] It is recommended that the electronics be operated by someone (an assistant) other than the performer who can view the score and change the electronics in accordance to the ritual being performed. It is also recommended that the performer and the assistant work together in rehearsals prior to the performance to design electronic effects that will best suit the designated ritual. For example, ritual 8 requires the performer to drink a glass full of liquid and then break the glass with a brick. The act of breaking a glass produces a relatively short sound in comparison to the length of sound produced by sawing a length of wood with a manual saw. For this ritual

[76] Ibid.

(breaking glass), an effect that emphasizes this action, such as a delay, is suggested. For a ritual such as sawing (a longer sound), an effect such as pitch manipulation or a chorus is suggested. Ultimately, these decisions should be made with careful thought by the performer to ensure that the rituals have a depth of character to their original qualities. As an aside, in an interview with the writer, Applebaum has stated that if he were to compose *Echolalia* today, he would have left out the electronic component altogether. He states that he felt the piece needed the electronic component at the time.[77]

Another challenge of tackling *Echolalia* is simply acquiring the materials necessary for performance. Applebaum states that the objects can be substituted by other objects, however, when possible, the objects called for are preferred. The following Example illustrates all of the objects required for a performance of *Echolalia*.

[77] Mark Applebaum, phone interview by author, May 12, 2020.

Typewriter	One bunch of fresh carrots, preferably with green leaves attached; ossia: 4-6 loose carrots
Typewriter paper	1-inch thick pine board to be sawed (low or medium grade quality), width to match wooden box, length to be approximately one foot longer than wooden box (so that after being cut it matches wooden box exactly as lid)
Hardcover book	Duct tape
Portable, cordless drill, fully charged	Drill bit
Wire spool	Wire cutters
4-8 dry sticks/branches, 1-3 ft. in length; ossia: 1 package dry linguini	Wood saw
Bricks	Kitchen knife
Rubber bands	Length of chain
Plastic cup	Padlock & key
Blue or green Gatorade; ossia: bottled water	Wooden box
Paper bag	Hammer
Ace stapler, staples	Nails in a container
Aluminum tube (HVAC)	Balloons: two colors
Butcher paper	Triangle
Marker	Triangle beater
Scissors	Triangle mount
Stamper(s)	Microphone stand with boom (to be used as a triangle stand and to hold balloons)
Pen	Table: 6 ft. wide x 2.5 ft. deep (or larger)
Wristwatch	Eye protection (optional)
Paper stamps and/or fragile stickers	4 microphones (2 on boom stands, 2 on tabletop), mic cables, mixer with phantom power and stereo aux loop, signal processor(s), stereo PA
Container (e.g. typewriter case may be used)	Reel of magnetic tape in its own cardboard box
Can of spray paint, loud color (full or partial; only a few blasts are needed)	

Example 24. Performance materials for *Echolalia*.[78]

[78] Mark Applebaum. "Program Notes to *Echolalia*." Self-published, 2006.

In *Echolalia*, there are several instances in which objects are permanently altered from their original state (e.g. breaking glass, sawing wood, spray painting a book, chopping carrots, popping balloons, etc.). It is suggested that such rituals be mimed when appropriate. The writer also suggests that the performer execute the rituals as intended at least once or twice before the live performance is given.

In an attempt to convey the character that the composer had in mind, the performer is asked to perform each ritual as if the actions are "musical conventions in some alien culture".[79] Applebaum does not want the piece to appear comical or humorous at any point, but rather to appear emotionless as if they have practiced (as they would their instrument) wrapping chopped carrots with chains extensively for years. This is an area where multiple connections can be drawn to *Aphasia* (written four years after *Echolalia*) – both the desire for the performer to "keep a straight face" and the inspirational source that is a disorder.

In memorizing the order of events, the writer suggests joining the rituals together into small groups that chronologically make sense. Example 25 below, illustrates these groupings.

[79] Ibid.

Group	Rituals
Rituals 1-5	1. Type “Echolalia”. 2. Pull paper from typewriter and rip into pieces. 3. Place pieces of paper into a book. 4. Tape the book shut. 5. Drill a hole in the book.
Rituals 6-13	6. Break sticks. 7. Attach sticks to brick. 8. Drink liquid and break glass with brick. 9. Place glass shards into a bag and put bag into tube. 10. Stomp on tube. 11. Place tube on paper, trace outline, cut tracing with scissors. 12. Stamp paper. 13. Put stamper in container.
Rituals 14-20	14. Saw board. 15. Use board as cutting board for carrots. 16. Tie carrots with chain and padlock. 17. Use board as lid for wooden box and hammer box closed. 18. Hang book from box via protruding nail. 19. Spray paint the book. 20. Attach length of magnetic tape, also also via protruding nail.
Rituals 21-22	21. Pop balloon. 22. Play single note on triangle.

Example 25. Groupings of rituals for *Echolalia*.

CHAPTER VII

CONCLUSION

But, is it music? This is the question Applebaum poses in his widely popular TED talk.[80] However, as someone who has cited boredom as a catalyst for his creations, Applebaum has challenged many to consider the notion that this may be the wrong question to ask. Instead, he suggests asking, "Is it interesting?" During a phone interview with the composer in October of 2016, Applebaum stated:

> When asked how you decide if a piece of music is successful, I've often thought that a successful piece of music should cause the audience to ask two questions. The first is 'What the hell was that?' ... And then the second question is 'Hmm... can I hear more?'[81]

If one were to illustrate the lineage of Mark Applebaum's work, it would be a long line full of exciting curves, shapes, meanings, and emotions. In only a brief exploration of a sample size of Applebaum's creativity will one discover homemade instruments, imaginative glyphs intended as a stimulus for sonic realization, and pieces that incorporate visual gesture. However different these enterprises may seem; they all appear to have at least one thing in common – the desire to challenge the ontology of music.

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[80] TEDxStanford. "Mark Applebaum: The Mad Scientist of Music." Filmed May 2012. Duration: 16:50. http://www.ted.com/talks/mark_applebaum_the_mad_scientist_of_music?language=en.
[81] Mark Applebaum, phone interview by author, October 27, 2016.

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APPENDIX A

CHRONOLOGICAL LIST OF WORKS

YEAR	TITLE	INSTRUMENTATION
1986	That Ain't No Jello Mold	Piano, contrabass, ten persons reciting texts
1987	Unholy & Surreal	2 pianos
1989	Attention Span	String trio interrupted by television-watcher accompanied by piano
1990	H.L.T.R. (How long 'til the reception)	Piano and video
	58'20"	Piano, viola, contrabass, trombone
	Nepotism	4 percussion, violin, viola, cello, contrabass
1991	Penumbra	Piano
	Zero-One	Solo *Mousetrap*
	Catastrophe	2-channel electronic playback
	Lament	String orchestra
	S-tog	A constellation for players based on the Copenhagen subway map
1992	Janus	Flute, oboe, clarinet, bassoon, horn, 2 violins, viola, cello, contrabass
	Mt. Moriah	String quartet
	1:00	String quartet
	The Plate of Transition Nourishes the Chameleon Appetite	Violin
	Anesthesia (+83)	Viola
	Sargasso (83+)	Cello
	Sandman	2-channel electronic playback
1993	Dead White Males (Lunching in the Perspectival Cafeteria)	2 flutes, 2 oboes, 2 clarinets, bass clarinet, 2 bassoons, 4 horns, 4

		trumpets, 3 trombones, tuba, 3 percussion, piano, harp, strings
1994	Hymn	Saxophone quartet
	7 one-minute canons	Flute, vibraphone, cello
	Narcissus: Strata/Panacea	Marimba
1995	Quadrivium B: Home Economics, Acting, Sexual Education, Wood Shop	Piano
	Scipio Wakes Up (and Smells the Coffee)	Six players on violin, bassoon, two electronic keyboards, electronic drumset, electronic marimba, six electroacoustic sound-sculptures
	Tlön	3 conductors, no players
	Elegy	Carillon or piano
1996	Mousetrap Music	A CD of electroacoustic sound-sculpture improvisations
	Dr. Applebaum, why don't you use your powers for good and not for evil? They laughed at me at the university, ellipses.	Piano
	Triple Concerto	SSAATTBB, piano, percussion, contrabass soli, concertante of 2 percussionists, guitar, harp
1997	Ambitus	Tuba and piccolo soloists, flutes 1 & 2, oboe, Eb clarinet, Bb clarinets 1, 2, & 3, bass clarinet, bassoon, alto saxophone 1 & 2, tenor saxophone, baritone saxophone, trumpets 1, 2, & 3, horns 1, 2, 3, & 4, trombones 1 & 2, bass trombone, euphonium, percussion 1, 2, & 3

	column facing on 3 behind lintel	A docudrama about architect Louis Sullivan and photographer-preservationist Richard Nickel for bass clarinet, piano, 2 percussion; players recite texts
	Catfish	Percussion trio
	Sticks and Stones	Piano and bass clarinet
	Neo-Tribes	Alto saxophone
1998	That Brainwave Chick	NAI: Neural Audio Imaging/EIEIO Modulation: Electro-encephalograph In, Electronic Instrument Out Modulation. A collaborative installation with Paras Kaul for live brainwave data, converted to MIDI information, and transformed by a neural network composed with Max software
	Disciplines	Piano
	Discipline I: Heliopolis	Piano
	Discipline II: Cosmo Drama	Piano
	Discipline III: Ontological Shock	Piano
	Discipline V: From Saturn to Alabama: Travels in Outer Space	Piano
1999	The Janus ReMixes: Exercises in Auto-Plundering	A CD of digital remixes of recordings of extant acoustic works
	Aphoristic Fragment	2-channel electronic playback
	Meditation	Piano six hands
	Go, Dog. Go!	2 percussion
	Entre Funérailles I	Trumpet
	Entre Funérailles II	Vibraphone
	Omnibus Etude	Piano

2000	Concerto for Florist and Ensemble	Performance florist and ensemble
	Architettura Redux	A collaboration exploring the synergies of electronic music and contemporary architecture, with Director Iara Lee, for electroacoustic sound-sculptures with live electronics accompanying slide projections
	Intellectual Property I	Disklavier and pianist
	Entre Funérailles IV	Flute
2001	Sonic Circuits ReMix	A collaboration with John Von Seggern, Stephen Ives, & Christiaan Virant, laptop computer DJs; Guy Le Claire, guitar; and Jun Kung, drums
	Suicides (1956, 1970)	2-channel electronic playback
	Skumfiduser!	2 flutes, 2 oboes, 2 clarinets, bass clarinet, 2 bassoons, 4 horns, 3 trumpets, 3 trombones, tuba, 4 percussion, strings, 2-channel electronic tape (CD)
	56 ½ ft.	Chamber orchestra: flute, oboe, clarinet, bassoon, horn, trumpet, trombone, 2 percussion, piano, violin, viola, cello, contrabass
2002	Plundergraphic	One or more instruments with live electronics, 8-channel tape, and live sound diffusion
	Pulitzer vs. MacArthur	Duo for *Mouseketier* with Eric Lyon, violin

		and live computer processing
	Improvisation for Mouseketier & Quadrichord	Duo for *Mouseketier* with Paul Dresher and his *quadrachord*, a long-stringed instrument
	Improvisation for Mouseketier & Celleto	Duo for *Mouseketier* with Chris Chafe and his *celleto*, an electronic cello
	Sum=Parts	A cycle for chamber orchestra: flute, oboe, clarinet, bassoon, horn, trumpet, trombone, 2 percussion, piano, violin, viola, cello, contrabass
	Merit	Wind quintet
	20	String quartet
	Seriousness	String trio
	Integrity	2 percussion and piano
	Depth	Trombone and contrabass
	Authenticity	Trumpet
	Pre-Composition	8-channel electronic playback
2003	Licensed to Fail	Duo for *Mouseketier* with Paul Dresher and his *quadrachord*, a long-stringed instrument, and live electronics
	Mouseketier Praxis (Private and Consensual Activities I-IV)	Solo for *Mouseketier* with live electronics
	Decameron	Trio of clarinet/bass clarinet, percussion, & cello
	Fanfare for Brian Ferneyhough	2 percussion
	Jetsam	Piano trio: violin, cello, piano
	Landscape	Piano trio: violin, cello, piano

	Ferneyhough ReMix (Affection Aphorism 1)	2 percussion and 2-channel tape (CD)
	Snagglepuss ReMix	2-channel electronic playback
2004	Martian Anthropology 1•2•3	Piccolo, 2 flutes, 2 oboes, English horn, 2 clarinets, bass clarinet, 2 bassoons, contrabassoon, 4 horns, 3 trumpets, 3 trombones, tuba, 7 percussion, timpani, piano (doubling celesta), 2 harps, strings
	Wristwatch: Alien Argot	Choir—any number of voices—following a canonic notational specification appearing on the face of custom wristwatches. An autonomous part of *Martian Anthropology 4•5•6*
	Wristwatch: Geology	Players tapping 2 stones together — following a canonic notational specification appearing on the face of custom wristwatches; optional instrumental or vocal soloist
	Accretion/Deletion	String quintet: 2 violins, viola, cello, contrabass. An autonomous part of *Martian Anthropology 4•5•6*
	Identity Destruction Sport	Percussion, electric guitar, 2 violins, viola, cello, contrabass. An autonomous part of *Martian Anthropology 4•5•6*
	Asylum	Percussion soloist with flute, clarinet, horn,

		trombone, guitar, violin, viola, cello, contrabass
	Theme in Search of Variations I	Percussion trio
	DNA	Guitar
2005	Martian Anthropology 4•5•6	Chamber opera: SATB soli, 4 dancers, 4 actors, 2 violins, viola, cello, contrabass, electric guitar, percussion, Logos Foundation (Gent, Belgium) MIDI robot orchestra, video projection
	Agitprop	Electroacoustic sound-sculpture soloist and jazz orchestra: 2 alto saxophones, 2 tenors saxophones, baritone saxophone, 4 Bb trumpets, 4 trombones, piano, electric guitar, contrabass, drums, percussion
	The Blue Cloak	Electroacoustic sound-sculpture soloist with flute (doubling piccolo & alto), clarinet (doubling Eb and bass), cello, percussion, piano, piano interior player
	Mobile for Paper	Performers with one or more pieces of paper
	Sixteen	Trumpet in Bb, celesta, three cowbells, large tam-tam, cello, violin, bass clarinet, vibraphone, glockenspiel, three triangles, xylophone, crotales, guitar, trombone, glass windchimes

	48 Objects	16 players, each with 3 objects
	On the Nature of the Modern Age	Piano duo with live electronics
	Glass Bead Game	LOGOS Foundation (Gent, Belgium) MIDI robot orchestra: *Piperola, Ake, Pianola, Vibi, Tubi, Klung, Troms, Thunderwood, Springers,* and *Drippers*. An autonomous part of *Martian Anthropology 4•5•6*.
	The Bible without God	Score for dance: 16 players plus electroacoustic sound-sculpture and live electronics
	5:3	For 8 cracklebox players and 2 dice rollers
	Circulation	Process piece for any number of players
2006	Magnetic North	Brass quintet plus soloist with optional percussion
	Wristwatch: Meridian	Players responding to a canonic notational specification appearing on the face of custom wristwatches; an autonomous piece extracted from *Magnetic North*
	Martian Anthropology 7•8•9	Six players performing on violin, bass clarinet, two electronic keyboards, electronic drumset, electronic marimba, crackleboxes, bricolage drumset
	Echolalia	22 Dadaist rituals with live electronics

	Variations of Variations on a Theme by Mozart	4-channel electronic playback
	40 Cryptograms	A graphic score
2007	Theme in Search of Variations	Flute, trumpet, piano, percussion
	Disparate Bodies	A networked performance taking place simultaneously at Stanford University's CCRMA, Queen's University, Belfast's SARC, and New York City
	Sock Monkey: Transcription of a Little Girl Running around the House	Piccolo, 2 flutes, 2 oboes, 2 clarinets, bass clarinet, bassoon, contrabassoon, 4 horns, 3 trumpets, 2 trombones, bass trombone, tuba, 4 percussion, piano (doubling celesta), 2 harps, strings
2008	Medium	Four players
	The Metaphysics of Notation	A graphic score
2009	Concerto for Florist and Orchestra	Performance florist and orchestra
	Straitjacket	Percussion quartet plus percussion soloist
	Pause	Piano
	Skeletons in the Closet	8-channel electronic playback
2010	Coat Room	Octet: violin duo, clarinet duo, tuba duo, accordion duo
	Curb Weight Surgical Field	Duo for grand piano and two players
	Aphasia	Vocalist or actor with tape
2011		
2012	30	Percussion ensemble of up to 12 players: Three interlocking pieces for

		one, four, and seven players
	The Third Decade	Percussion septet. An autonomous piece extracted from *30*
	The Second Decade	Percussion quartet. An autonomous piece extracted from *30*
	The First Decade	Amplified percussion. An autonomous piece extracted from *30*
	Rabbit Hole	Octet: flute, trumpet, violin, viola, cello, three percussion
	Wristwatch: Rabbit Hole	Players responding to a canonic notational specification appearing on the face of custom wristwatches; an autonomous piece extracted from *Rabbit Hole*
	Gone, Dog. Gone!	Percussion duo
2013		
2014	Speed Date	Violin and cello
	Composition Machine #1	Soloist playing pictographic notations, amplified table, various objects, and marker
	Clicktrack	Twelve percussionists responding to individual clicktracks
	Wristwatch: Speed Dating	Players responding to a canonic notational specification appearing on the face of custom wristwatches; an autonomous piece extracted from *Speed Dating*
	Speed Dating	Octet: flute, clarinet, trombone, percussion, piano, violin, cello, & contrabass

2015	Darmstadt Kindergarten	String quartet
	Control Freak	Singer plus octet of oboe, clarinet, bassoon, trumpet, piano, percussion, violin, & cello
	Control Freak 2	Singer plus octet of oboe, clarinet, bassoon, trumpet, piano, percussion, violin, & cello
	Wristwatch: Control Freak	Players responding to a canonic notational specification appearing on the face of custom wristwatches; an autonomous piece extracted from *Control Freak*
2016	Three Unlikely Corporate Sponsorships	4-channel electronic playback
	Control Freak 3	Vocalist plus octet of flute, clarinet, piano, percussion, violin, viola, cello, & contrabass
	Care Package	Soloist playing with or on various idiosyncratic objects belonging to a yellow lacquer box
2017	Xenophobe: In Memory of Democracy	2 flutes, 2 oboes, 2 clarinets, 2 bassoons, 4 horns, 3 trumpets, 3 trombones, 1 percussion, strings
	Control Freak 4	Vocalist plus octet of flute, oboe, clarinet, piano, percussion, violin, viola, & cello
	Administocracy	Singer, bass clarinet, trumpet, trombone
	50 Things	2 violins
	Tricks	Card trick synchronized to 2-channel sound

2018	Canoe Patron	PowerPoint animation with 2-channel audio
	Packing List for the Brian Ferneyhough Circus Deposition (aka Fargo Argo)	An ergodic text in spreadsheet form
	Springtime for Travis and Andy	Electric guitar and percussion
	Dead Name	String quartet
	Flashlight	String quartet
2019		
2020	Venture Capital Punishment	for Ensemble Talea